close out = < drinking water standard  monit

| RTN | SITE NAME | SITE LOCATION | NOTIFICATION DATE | SITE C |
|---|---|---|---|---|
| 4-00823 | Barnstable Airport | 480 Barnstable Road | 11/10/1998 | avaitio |
| 4-10046 | Barnstable Airport | 480 Barnstable Road | 10/22/1993 | Not Ap |
| 4-11841 | Barnstable Airport | 480 Barnstable Road | 12/1/1995 | aviatio |
| 4-12911 | Barnstable Airport | 480 Barnstable Road | 12/10/1996 | avaitio |
| 4-14472 | Barnstable Airport | 480 Barnstable Road | 1/23/1999 | avaitio |
| 4-14860 | Barnstable Airport | 480 Barnstable Road | 7/20/1999 | aviatio |
| 4-15600 | Barnstable Airport | 480 Barnstable Road | 7/26/2000 | aviatio |
| 4-17856 | Barnstable Airport | 480 Barnstable Road | 7/26/2000 | aviatio |
| 4-18570 | Barnstable Airport | 480 Barnstable Road | 7/25/2004 | NA |
| 4-19231 | Barnstable Airport | 480 Barnstable Road | 7/22/2005 | NA |
| 4-20567 | Barnstable Airport | 480 Barnstable Road | 6/12/2007 | NA |
| 4-20890 | Barnstable Airport | 480 Barnstable Road | 11/9/2007 | NA |
| 4-21315 | Barnstable Airport | 480 Barnstable Road | 6/18/2008 | aviatio |
| 4-21608 | Barnstable Airport | 480 Barnstable Road | 10/27/2008 | NA |
| 4-00026 | Former Charter Station | 258 Iyanough Road | 1/15/1987 | autom |
| 4-00191 | Former Charter Station (Duplicate Number) | 258 Iyanough Road | NA | NA |
| 4-00392 | BP Service Station | 230 Iyanough Road | 7/15/1987 | autom |
| 4-00716 | Nelson Coal and Oil | 180 Iyanough Road | 5/23/1989 | fuel oil |
| 4-19407 | Nelson Coal and Oil | 180 Iyanough Road | 7/10/2002 | petrole |
| 4-00793 | Shell Service Station | 590 Iyanough Road | 10/15/1989 | autom |
| 4-17651 | Shell Service Station | 590 Iyanough Road | 2/11/2003 | autom |
| 4-00862 | Mobil Service Station | 156 Iyanough Road | 1/15/1990 | autom |
| 4-11972 | Mobil Service Station | 156 Iyanough Road | 3/5/1996 | autom |
| 4-13422 | Mobil Service Station | 156 Iyanough Road | 10/9/1997 | autom |
| 4-15997 | Mobil Service Station | 156 Iyanough Road | 1/23/2001 | autom |
| 4-18891 | Mobil Service Station | 156 Iyanough Road | 1/21/2005 | autom |
| 4-19209 | Mobil Service Station | 156 Iyanough Road | 7/11/2005 | autom |
| 4-00461 | Bouys Realty BDP | 599 Iyanough Road | 1/15/1998 | NA |
| 4-13511 | Kents Carpet Land | 379 Iyanough Road | 11/25/1997 | NA |
| 4-19452 | Undeveloped Lot | 114 Iyanough Road | 11/1/2005 | petrole |
| 4-00907 | Shell Service Station | Airport Road | 5/16/1990 | NA |
| 4-00368 | Cyprus Realty Trust | 157 Airport Road | 7/15/1987 | NA |
| 4-01080 | Packaging Industries | 70-84 Airport Road | 7/15/1991 | freon |
| 4-01081 | Ray Blackburn Auto Salvage | Airport Road | 7/15/1991 | autom |
| 4-10573 | Shell Service Station | Airport Rotary | 6/23/1994 | autom |
| 4-10791 | No Location Aid | Airport Road | 6/8/1995 | NA |
| 4-11350 | Cape & Island Steel | 6 Airport Road | 5/8/1995 | NA |
| 4-13171 | No Location Aid | Airport Road | 7/9/1997 | NA |
| 4-11270 | Near Mary Dunn Road | 6 Airport Way | 4/6/1995 | mineral |
| 4-12608 | Steamship Authority | Mary Dunn | 10/29/1996 | diesel fi |
| 4-00190 | Barnstable Fire Training } temp. solution | Mary Dunn | 8/25/1986 | gasoline |
| 4-20021 | Barnstable Fire Training } | Mary Dunn | 8/25/2006 | gasoline |
| 4-10893 | No Location Aid | Mary Dunn | 10/23/2002 | NA |
| 4-11707 | Flint Rock | Mary Dunn | 10/6/1995 | fuel oil |
| 4-15715 | Cape Flight | Mary Dunn | 8/30/2000 | aviation |
| 4-22824 | Barnstable Water Treatment | 656 Mary Dunn | 8/31/2010 | liquid pi |

47

sediment in ponds not leaking out => not 21e

monitoring trend downward (conc. is less) Started

| SITE CONTAMINANTS | MEDIA IMPACTED | MCP STATUS | NEXT DELIVERABLE DUE | COMMENT |
|---|---|---|---|---|
| 3 avaition fuel/oil | soil/groundwater | Phase V ROS | ROS Status Report 8/11 | Air Spargin |
| 3 Not Applicable (NA) | NA | NA | NA | NA - Notifi |
| 5 aviation fuel/oil | soil/groundwater | NA | NA | Linked to 4 |
| 5 avaition fuel/oil | soil/groundwater | NA | NA | Linked to 4 |
| 9 avaition fuel/oil | soil/groundwater | A-2 RAO 6/99 | NA | Permanent |
| 9 aviation fuel/oil | soil/groundwater | A-2 RAO 7/99 | NA | Permanent |
| 0 aviation fuel/oil | soil/groundwater | A-1 RAO 9/00 | NA | Permanent |
| 0 aviation fuel/oil | soil/groundwater | A-1 RAO 9/00 | NA | Permanent |
| 1 NA | NA | NA | NA | NA-Notific |
| 5 NA | NA | NA | NA | NA-Notific |
| 7 NA | NA | NA | NA | NA-Notific |
| 7 NA | NA | NA | NA | NA-Notific |
| 8 aviation fuel/oil | soil/groundwater | A-2 RAO 8/08 | NA | Permanent |
| 8 NA | NA | NA | NA | LSP retract |
| automobile fuel | soil and groundwater | C-1 RAO 12/09 | IMRCD 7/12/10 | MNA - C9- |
| NA | NA | NA | NA | NA-Duplica |
| automobile fuel | groundwater | DPS 5/06 | NA | Down-grac |
| fuel oil | soil | C-1 RAO 10/01 | IMRCD 10/10/2006 | Inspection, |
| petroleum constituents | groundwater | DPS 5/06 | NA | Down-grac |
| automobile fuel | soil/groundwater | B-1 RAO 11/96 | NA | Permanent |
| automobile fuel/oil | soil/groundwater | A-2 RAO 1/09 | NA | Permanent |
| automobile fuel | soil/groundwater | A-2 RAO 12/94 | NA | Permanent |
| automobile fuel/oil | soil/groundwater | A-2 RAO 7/96 | NA | Permanent |
| automobile fuel/oil | soil/groundwater | A-2 RAO 2/06 | NA | Permanent |
| automobile fuel/oil | soil/groundwater | NA | NA | Permanent |
| automobile fuel/oil | soil/groundwater | A-2 RAO 2/06 | NA | Linked to 4 |
| automobile fuel/oil | soil/groundwater | A-2 RAO 2/06 | NA | Permanent |
| NA | NA | NA | NA | Permanent |
| NA | NA | NA | NA | MassDEP c |
| petroleum constituents | groundwater | DPS 6/06 | NA | NA - Notif |
| NA | NA | NA | NA | Down-grac |
| NA | NA | NA | NA | MassDEP c |
| freon | soil/groundwater | A-2 RAO 8/01 | NA | MassDEP c |
| automobile fuel, oil and metals | soil/groundwater | A-2 RAO 12/08 | NA | Permanen |
| automobile fuel | soil/groundwater | A-1 RAO 10/94 | NA | Permanen |
| NA | NA | NA | NA | Permanen |
| NA | NA | NA | NA | NA-Notific |
| NA | NA | NA | NA | NA-Notific |
| mineral spirits | soil | A-2 RAO 4/96 | NA | NA-Notific |
| diesel fuel | soil | A-1 RAO 1/97 | NA | Permanen |
| gasoline due to training | soil/groundwater | C-1 RAO 2/10 | IMRCD 2/11. | Permanen |
| gasoline from leaking car | soil/groundwater | NA | NA | MNA - Bei |
| NA | NA | NA | NA | Linked to 4 |
| fuel oil | soil/groundwater | A-2 RAO 12/95 | NA | MassDEP c |
| aviation fuel | soil | A-1 RAO 5/02 | NA | Permanen |
| liquid propane from AST | soil | A-2 RAO 12/10 | NA | Permanen |
| | | | | Permanen |

2011 CCC monitoring

Started: 1990's ~ 20/62

| .IVERABLE DUE | COMMENTS |
|---|---|
| ıs Report 8/11 | Air Sparging and SVE along with biosparging. C9-C12 @1300 ppb, C9-10 @1100 ppb, C11-C22 @433 pp |
| | NA - Notification Requirements in 310 CMR 40.0300 not triggered. |
| | Linked to 4-0823 via Permit Modification in 12/96. |
| | Linked to 4-0823 via Permit Modification in 8/00. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| | NA-Notification Requirements in 310 CMR 40.0300 not triggered. |
| | NA-Notification Requirements in 310 CMR 40.0300 not triggered. |
| | NA-Notification Requirements in 310 CMR 40.0300 not triggered. |
| | NA-Notification Requirements in 310 CMR 40.0300 not triggered. |
| | Permanent Solution Achieved. |
| | LSP retracted RNF on 12/2/08. |
| '12/10 | MNA - C9-C10 Aromatics @1200 ppb, C5-C8 Aliphatics @1300 ppb, and C9-C12 Aliphatics 1500 ppb ir |
| | NA-Duplicate Number assigned. Work being completed under RTN 4-0026. |
| | Down-gradient Property Status Submittal. |
| )/10/2006 | Inspection, Maintenance and Monitoring Report missing from file. |
| | Down-gradient Property Status Submittal. — someone else |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| | Linked to 4-13422 with a Permit Modification, and additional work completed under this RTN. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| | MassDEP detemined not a site on 7/23/1993. |
| | NA - Notification Requirements in 310 CMR 40.0300 not triggered. |
| | Down-gradient Property Status Submittal. |
| | MassDEP detemined not a site on 5/16/1990. |
| | MassDEP determined not a site on 8/22/96. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| | NA-Notification Requirements in 310 CMR 40.0300 not triggered. |
| | NA-Notification Requirements in 310 CMR 40.0300 not triggered. |
| | NA-Notification Requirements in 310 CMR 40.0300 not triggered. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| /11. | MNA - Benzene-55.2 ppb & nap 82 ppb Charles Station Barnsta |
| | Linked to 4-0191 via Permit Modification. Additional response actions under RTN 4-0190. |
| | MassDEP determined not a site in 10/02. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |
| | Permanent Solution Achieved. |

F.O 2011 CCC Monitoring

@1300 ppb, C9-10 @1100 ppb, C11-C22 @433 ppm in 9/10.
not triggered.

not triggered.
not triggered.
not triggered.
not triggered.

tics @1300 ppb, and C9-C12 Aliphatics 1500 ppb in GW in 3/10.
eted under RTN 4-0026.

issing from file.
none else

Charter Gas Station
source of leak.
downstream Gas Sta
not contributing

additional work completed under this RTN.

00 not triggered.

00 not triggered.
00 not triggered.
00 not triggered.

~~Charter Gas Station~~ Barnstable Fire Academy, Finger like plu
NOT movin
ional response actions under RTN 4-0190.

Charter Gas Station
source of leak
downstream Gas Sta
NOT contributing

wy, Finger like plume
NOT moving

## Fw: Comments re: Barnstable Airport DEIR

**Davidj Gray** to: Karen Mcguire, Kevin Reilly 06/03/2011 11:05 AM

Good thing you mentioned MaryJo - I had completely forgotten about the DEIR review in 2003. I have no other record beyond this thread, so I don't know if MaryJo ever provided comments. I cannot find any comments that I provided on the document. I did find and have attached our comment letter on the related ENF.

Document.pdf

djg

----- Forwarded by Davidj Gray/R1/USEPA/US on 06/03/2011 10:59 AM -----

| | |
|---|---|
| From: | Davidj Gray/R1/USEPA/US |
| To: | MaryJo Feuerbach/R1/USEPA/US@EPA |
| Date: | 09/04/2003 01:48 PM |
| Subject: | Re: Comments re: Barnstable Airport DEIR |

Hi MaryJo,

Sorry for not getting back to you sooner and not reviewing the DEIR like I said I would. I have been overloaded with grants processing and Phase II applications of late and just cannot fit it in. I will look at it once I free up - if you would still consider a late EPA comment letter.

djg
MaryJo Feuerbach

**MaryJo Feuerbach**
09/02/2003 11:02 AM

To: Davidj Gray/R1/USEPA/US@EPA
cc:
Subject: Comments re: Barnstable Airport DEIR

Hi Dave,

I should have added that at this point I'm not sure if I'll be commenting. The decision will probably depend on whether you have time to review this and whether you feel comments are warranted. Please let me know what you think.

MaryJo
----- Forwarded by MaryJo Feuerbach/R1/USEPA/US on 09/02/2003 11:00 AM -----

**MaryJo Feuerbach**
09/02/2003 10:53 AM

To: Davidj Gray/R1/USEPA/US@EPA
cc:
Subject: Barnstable Airport DEIR

Hi Dave,

I asked you to review the Barnstable Airport DEIR about a month ago. Comments are due this week. I've received several comments about the adequacy of their stormwater plans. Will you have time to review this and get me comments by Thursday?

MaryJo

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 1
1 CONGRESS STREET, SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023



September 7, 2000

Bob Durand, Secretary
Executive Office of Environmental Affairs, Attention: MEPA Office
Laura Rome, EOEA No. 12267
251 Causeway Street, 9th Floor
Boston, MA 02114-2150

Re: EOEA #12267, Expanded Environmental Notification Form (ENF), Barnstable Airport Improvement Project.

Dear Secretary Durand:

I am writing to offer EPA's comments on the ENF dated August 15, 2000 for the proposed Barnstable Airport Improvement Project in Hyannis, MA. The ENF explores potential impacts from the proposed construction and operation of a new terminal, apron and parking area for the Barnstable Airport. The proposed facility would replace and expand upon existing operations and is intended to support future demand at the airport through 2015. The airport lands are located nearby and upgradient of several public water supply wells which provide drinking water to Barnstable, including downtown Hyannis, and parts of Centerville-Osterville. Ground water lies close to the land surface in this area and also supports several ponds and wetlands with high ecological values. The Upper Gate Pond, Lewis Pond and Mary Dunn Pond and their associated wetlands provide habitat for several rare species. EPA is concerned about potential impacts from the proposed project upon drinking water, aquatic resources, wetlands, habitat and growth management. A thorough evaluation of environmental impacts resulting from each alternative (including No Action) should be provided in the Environmental Impact Report (EIR). (1)

Existing operations at the airport pose a threat to drinking water sources due to the use and storage of hazardous materials, aircraft washing operations, generation of storm water runoff, refueling, aircraft and vehicle maintenance, parking, and deicing activities. Past contamination incidents at the airport demonstrate the vulnerability of the ground water underlying this area for contamination. For this reason, EPA is concerned about plans to expand and relocate the airport terminal, apron and parking areas. It is our understanding that nearly all of the airport is located within Zone II wellhead protection areas, and the north-central site is located directly upgradient of the most productive well (the airport well) used by the Barnstable Water Company. Nearby wells are also operated by the Barnstable Fire District. EPA prefers that activities involving the use or handling of hazardous materials occur outside of drinking water protection areas (Zone IIs) to the extent possible, due to their inherent threat of potential contamination of ground water. Where this isn't possible, these activities should generally be located as far away from downgradient water supplies as possible. We request that the EIR thoroughly describe and (2) NCA, 1

evaluate potential impacts of each alternative (including the No Action option) on ground water and nearby drinking water sources.

The airport property contains wetlands and surface water ponds, is home to several rare animal and plant species, and may also include vernal pools. Any proposed changes in airport operations should carefully evaluate and seek to minimize impact on these sensitive areas. (4) NCA 2

The ENF thoroughly describes the need to improve efficiency at the airport for passengers and its own operations, and to lessen congestion along Route 132 and the rotary. Anyone who has traveled this area during the summertime understands the Barnstable Municipal Airport Commission's desire to improve access to the Airport. Congestion during the peak summer tourist season in Hyannis underscores the importance of growth management and transportation planning. The ENF explores the relationship between airport demand and changes in terminal size, efficiency, ticket prices and economic prosperity and argues that changes in terminal sizes, etc. does not impact demand. A more fundamental question relating to growth management is whether it is appropriate for the Barnstable Municipal Airport to meet increasing demand for its services given the environmental sensitivity of this site. The ENF estimates that demand for airport services will result in a doubling of the number of enplanements within the next 15 years and presumes that increased demand must be met. Accommodating increasing demand for airport services comes with an environmental price--increased impervious surfaces, traffic, hazardous waste handling, waste generation, and stormwater runoff. As part of future planning for the Airport, we recommend that the Barnstable Municipal Airport Commission evaluate and determine the ultimate environmental capacity of the airport lands to sustain development and plan future airport operations consistent with that capacity. (5)

In general, it makes environmental as well as economic sense to direct growth towards already-developed areas that have the infrastructure to support it, rather than encouraging low-density sprawl in undeveloped areas. Three of the four remaining proposed sites under consideration would require extensive new construction of access roads. In the "Traffic" section of the ENF, it was noted that the southwest alternative would be able to utilize existing access roads (Attucks Lane/Hadaway Rd.) and would require less new construction. It consequently poses the least impacts to adjacent land use, although there would be significant increases to impervious cover. This option was ranked as the most inexpensive alternative with the exception of the No Improvement option. According to the ENF the southwest terminal location offers the greatest advantages with respect to ground access, since it provides more direct, convenient travel to the terminal from Route 6. Construction access to the southwest site may be less problematic as the clear zone areas do not have to be crossed by the roadway. Preliminary information also indicates it may have the least potential impact on drinking water resources. Impacts to wetlands and rare species habitat are also less. Consequently, we would strongly recommend further consideration and evaluation of the southwest alternative (also called the Ray Blackburn Auto Salvage site). EPA believes this site may minimize environmental impacts to traffic, open space, and water resources. Furthermore, as part of EPA's Smart Growth Agenda, we support the redevelopment of Brownfield sites (formerly contaminated sites) when feasible. Redevelopment (6)

of this site could potentially be eligible for funding opportunities under the EPA and DEP Brownfields programs which could mitigate the costs for site assessment and clean up. EPA's targeted Brownfields Assessment Program could be a potential source of assistance. For information on this program, contact Jim Byrne at 617-918-1389.

The EPA is concerned about any potential use of the north-central site for an Airport terminal, apron and parking. Preliminary analysis provided in the ENF indicates that this alternative would threaten the ability of the Barnstable Water Company to operate its highest producing and best quality well, bring customers in proximity to rare plant and wildlife species, violate protective buffers recommended by the Cape Cod Commission around the Upper Gate Pond and Lewis Pond, and result in higher motor vehicle travel distances. (7) NCA. 3

**Additional Comments follow:**

1. The ENF identifies a range of criteria which will be used to evaluate potential sites for the project. The EIR should further explain these criteria and how they are being applied. (8)

2. The ENF identifies four alternatives for the project. To allow a full and comparable evaluation of alternatives, we recommend that each site is evaluated using consistent environmental criteria. NCA. 4

3. According to the ENF, extended parking is necessary for residents of Nantucket and Martha's Vineyard whom stay for extended periods of time (pg. A.2-9). Due to the fragility of the airport lands, we encourage the Barnstable Municipal Airport Commission to explore the feasibility of relocating extended parking off-site in a less sensitive area (outside Zone II areas and away from wetlands, rare species habitat, surface waters and coastal waters) and offering shuttle buses to transport passengers to the terminal during the peak summer period. (9) NCA.5

4. Land uses in the vicinity of the airport are primarily commercial and light industrial. While the proposed expansion of the airport terminal, parking and apron at the airport may be compatible with existing land uses, EPA is concerned about its potential incompatibility with the important environmental functions of the Airport lands. The EIR should specifically address consistency with local land use and open space plans and Cape Cod Commission Regional Policy Plan, including compliance with its Minimum Performance Standards. For example, the north-central alternative appears to violate many of the Cape Cod Commission's standards. (10) NCA. 6

5. The ENF indicates that the proposed alternatives would not directly impact any state-recognized wetlands. All direct and indirect impacts to wetlands, and the plants and wildlife they support, should be presented for each alternative in the EIR. (11) NCA. 7

6. The ENF states that access from the proposed Route 6a exit (both alignments A and B) would be considered for the north-central alternative. Alignments connecting with the proposed 6A exit should be explored and presented for each proposed alternative. (12) NCA. 8

Stormwater

7. Due to the complexity and size of the project, and the sensitivity of the aquifer, EPA recommends that the EIR include as much detail as possible about potential stormwater management practices for each alternative. Ideally, we would like to see detailed designs of the proposed stormwater system for each site and a discussion of how each will meet performance standards. Stormwater approaches presented in the ENF for alternatives in already-developed areas rely primarily on use of catch basins and swales. In the EIR we recommend the applicant consider the wide range of stormwater treatment systems available, many of which are geared to their use in developed areas and require little land area. Among the feasible stormwater treatment systems, the applicant should identify the systems which will best meet State and EPA stormwater standards and maximize the pre-treatment of contaminants (including VOCs) in stormwater prior discharge to surface waters or ground water. Ongoing maintenance and monitoring of the stormwater system should also be described.

(13) NCA.9

(14) NCA.10

8. According to the ENF, the town has designated three zones for ground water protection: aquifer protection area, ground water protection area and wellhead protection area. The town's zoning designations reflect the degree of sensitivity of land areas with aquifer protection areas being least sensitive (none of the airport land is in this area) and wellhead protection area being the most sensitive area. According to Figure A-7-2, the southwest and existing location alternatives appear to be in ground water protection area, and the southeast and north-central areas are in the most sensitive wellhead protection zone. The proposed sites do not appear to be compatible with zoning for ground water and wellhead protection areas. The project's compatibility with these zoning districts should be fully evaluated in the EIR.

(15) NCA.11

9. The EIR should fully describe the yield and quality of each potentially affected drinking water source, the need for that source to meet existing and anticipated future water supply demand, and the degree of treatment currently required for use of the source. Due to the importance of these water supply sources, the airport should work with local water suppliers to design and carry-out a ground water monitoring program to allow for early detection of any releases of drinking water contaminants to ground water from activities on-site. Existing and future ground water monitoring at the airport should be described.

(16) NCA.12

10. An important component of any water supply system is the protection of its drinking water source, including contingency planning in the event of an emergency such as hazardous materials spills. According the ENF, several improvements for ground water protection are planned at the airport. The improvements should proceed irregardless of whether the airport expands. To ensure proper handling of hazardous materials, a Spill Prevention Control and Countermeasures (SPCC) Plan must be developed. In addition to the parties mentioned in the ENF, EPA recommends that the Airport coordinate with the Barnstable Water Company and Barnstable Fire District to identify any specific concerns or recommendations which nearby water suppliers have for spill response. Procedures to notify the potentially affected water supplier should be an important component of that plan since proper response by water suppliers may lessen transport of spills toward drinking water wells.

(17)

11. For each alternative, the EIR should clearly identify the locations of fuel storage and dispensing, aircraft washing, and aircraft and vehicle maintenance. The EIR should further describe the proposed method for fuel storage, its proposed location, and all precautions which will be used to prevent spills of fuel which might enter in to the ground either directly, or via infiltration of storm water runoff, and which might eventually impact drinking water/ground water resources. The facility should provide containment for fuel storage in the event of a spill at the airport. The EIR should describe and map the location of all existing and proposed above-ground and under-ground fuel storage tanks, and describe measures used to prevent and contain leaks from those tanks. Procedures for waste handling and disposal should be described. The location and plans for vehicle and aircraft maintenance and washing should also be identified and all precautions to be used to lessen the risk of contaminants reaching the airport's stormwater system and underlying ground water should be explored and evaluated for each alternative.

(18) (19) done

12. The EIR should fully describe the location and procedures for all deicing anticipated with the project, including deicing of parking areas, roadways, and aircraft. If road salt will be used for airport roads and parking areas, its potential impact on sodium levels in nearby wells and ponds should be evaluated. Proposed containment of aircraft deicing chemicals should also be described in the EIR.

done (20) NCA.13

EPA appreciates the efforts made to-date by the applicant and its consultants to obtain feedback from local residents and officials, and state and federal agencies. EPA's staff will be available to offer additional guidance and suggestions for minimizing impacts from the proposed project, and plan to work further with the proponent during our Sole Source Aquifer Program review and other permitting programs. Please contact me or MaryJo Feuerbach of EPA's Massachusetts Office of Ecosystem Protection at (617)918-1578 should you have any questions about this letter.

Sincerely,

David M. Webster

David Webster, Director
Massachusetts Office of Ecosystem Protection

John Julius
(b) (6)

Mr. Gary Lopez
(b) (6)

Dear Messrs. Julius and Lopez:

Thank you for your letter of December 20, 2010 regarding threats to drinking water supplies near the Barnstable Municipal Airport. In particular, you express concern that contaminants from two surface water ponds at the Airport have been migrating via groundwater to nearby drinking water wells. You further request that the Environmental Protection Agency review this matter pursuant to Section 1424(e) of the Safe Drinking Water Act. Ms. Keara Moore of EPA's Office of Groundwater and Drinking Water in Washington, DC forwarded your letter to EPA's regional office in Boston for review and response.

The Barnstable Airport occupies the southeast quadrant of Cape Cod's Sagamore Lens, the largest of six ground water lenses on the Cape. Ground water at the airport flows from northwest to southeast. According to the 2010 Barnstable Municipal Airport Master Plan, ground water depths are approximately 23 to 27 feet below the airport.

Flow

The two ponds you reference in your letter, the Upper Gate and Lewis Ponds, receive storm water effluent from the airport, but any metals or polycyclic aromatic hydrocarbons (PAHs) – such as lead, pyrene and fluoranthene – in past discharges to the ponds would have been absorbed onto shallow pond sediments. Thus, these contaminants are unlikely to migrate from sediments to the underlying aquifer. The Master Plan reports that 2005 surface water samples from the ponds show dissolved lead concentrations were near background and that monitoring results for most PAHs were non-detect. Further, as part of facility improvements, new storm water treatment practices will be implemented which are anticipated to further reduce contamination in runoff to the ponds and aquifer.

good

We also understand that the consulting firm Horsely & Witten has begun an in depth study of the ponds to determine their water quality impacts, if any, to the surrounding aquifer. This study includes additional sampling of pond water, sediments and ground water beyond that which occurred from 1972 to 2007. Horsely & Witten will also examine other historical spill sites on the airport property to assess and verify their closure status.

supply

In addition, we have reviewed the results of monitoring conducted by the Hyannis Water System over the last three years (between and ) from its groundwater wells. The data we reviewed showed that no levels of contaminants were detected in the finished water from any of the wells above applicable EPA drinking water standards. The Water System has installed packed tower aeration treatment for the three Maher Road wells to remove volatile organic compounds (VOCs). The Maher Road wellfield is approximately 1,500 feet SE of the airport and over 4,000 feet from Upper Gate and Lewis Ponds. Monitoring results from the Maher Road wells conducted between ____ and ____ did not indicate detections of any regulated VOCs. There were detections of two VOCs for which EPA has issued advisories, but not enforceable standards. More specifically, dichlorodifluoromethane was detected at 6 parts per billion (beneath the EPA health advisory of 1000 parts per billion) and methyl tertiary butyl ether (MtBE) was detected in a range from 0.64 to 0.71 parts per billion (also beneath the EPA odor advisory of 20 parts per billion and taste advisory of 40 parts per billion).

As you note in your letter, sampling conducted in 2009 as part of a study by the Silent Spring Institute in three of the Hyannis Water System's wells and the distribution system detected two perfluorinated chemicals, PFOS and PFOA, for which EPA has health-based guidelines but not enforceable drinking water standards. With regard to PFOS, the study indicated that the highest level detected (22

**Comment [k1]:** Doug, how did you learn about this study? From talking with H& S? Also, do we have any idea when it might be completed?

**Comment [k2]:** Kevin – what were the monitoring periods covered in testing provided by MassDEP?

nanograms/liter in one of the Maher wells) was about 15 times lower than EPA's short-term provisional health advisory value of 400 nanograms/liter. For PFOA, the highest level detected was about one-half of the EPA's short-term provisional health advisory value of 200 nanograms/liter. The Silent Spring study also noted that while "the Barnstable Municipal Airport may be a source" of these two chemicals, other possible sources include discharges from the wastewater treatment plant in Barnstable and from septic systems. Schaider, Laurel, et. al., *Emerging Contaminants in Cape Cod Drinking Water*, Silent Spring Institute (May 2010) at 5-6. Silent Spring noted that "Additional testing is required to pinpoint the sources of these chemicals." *Id.* at iii. The study further concluded that for chemicals associated with household products such as PFOS and PFOA, direct contact with household products "would likely lead to much higher levels of exposure." *Id.* at 7.

Your letter also indicates concern that *Cryptosporidium* originating from the airport has resulted in the need for the Hyannis Water System to disinfect its wells. *Cryptosporidum* is a protozoa that can be expected to be found in surface water bodies, but is highly unlikely to be found in properly constructed and maintained groundwater wells and we found no evidence that this contaminant is in the nearby public water supply wells. While the water system does chlorinate its wells, Massachusetts policy requires disinfection when other treatment such as corrosion control or air stripping is implemented. With regard to your concern that chlorination can result in disinfection byproducts in the finished water, as noted above, our review of recent monitoring data indicated no exceedances of any drinking water standards including those for disinfection byproducts.

Finally, you state that a study by researchers at Boston University linked the Airport and the nearby public drinking water supply to cases of breast cancer. The study was retrospective and concluded that the sewage plume emanating from the Barnstable Water Pollution Control Facility may have had a significant historical impact on drinking water. The researchers specifically noted that "[a]rea groundwater sources for drinking water are subject to more protections now, and the impact of sewage on groundwater was carefully considered in recent expansion plans for the facility." Gallagher, et al. *Using Residential History and Groundwater Modeling to Examine Drinking Water Exposure and Breast Cancer*, Environmental Health Perspectives, Vol. 118, Number 6 (June 2010) at p. 775.

Sincerely,

Stephen Perkins, Director
Office of Ecosystem Protection
EPA Region 1

**draft of barnstable letter**

Karen Mcguire to: Doug Heath, Maureen McClelland, Kevin Reilly

02/25/2011 03:55 PM

Cc: Jane Downing, Davidj Gray

barnstable.docx

Doug, Kevin & Maureen --

Here's a rough draft of the Barnstable letter. Still needs a conclusion.

Kevin -- do you have any info from MassDEP re: current status of any 21E cleanup activity at the site?

Also, I have some questions related to the Silent Spring report:

- on page 5, the study states that some of the public water supply wells are "known to be contaminated by a plume of petroleum hydrocarbons and volatile organic compounds from the Barnstable Municipal Airport." Has anyone seen any data demonstrating this?

- would appreciate if someone could show me on a map the location of the Hyannisport Well (4010004-03G) and the approximate location of the historical sewage plume from the wastewater treatment facility.

Thanks for your help.

Karen

MAP

**Re: Fw: PFCs on Cape Cod - more info from R5**

**Davidj Gray** to: Jane Downing 06/16/2011 06:07 PM

Cc: Doug Heath, Julie Bliss, Karen Mcguire, Kevin Reilly

I have posted a large-scale drainage infrastructure map on the wall of the conference room we met in earlier today. For each drainage area, I've briefly annotated where the stormwater goes (i.e. Lewis or Upper Gate Ponds, or to ground through Class V well or infiltration basin). Notable is Drainage Area M located on the southern ends of the runways that infiltrates stormwater into the subsurface through Class V injection wells (i.e., leaching catch basins) or passively through gassed areas. Airport Rescue Fire Fighting buildings, equipment, and operations are located in this drainage area. The Airport's SWPPP does not mention anything about the use or release of AFFF during emergencies or training - but then again, the Multi-Sector General Permit allows and authorizes "discharges from firefighting activities" as a so-called allowable "non-stormwater discharge."

A A

FD Airport Fire Dept

Also, I found no record of NPDES Permit coverage (individual or remediation general permit) for Hubbard Oil. However, no surface water discharge permit may be required as they may no have a process water discharge and may re-inject their pump & treat system discharge.

djg

Jane Downing FYI ----- Forwarded by Jane Downing/R1/USEP... 06/16/2011 04:28:13 PM

From: Jane Downing/R1/USEPA/US
To: Doug Heath/R1/USEPA/US@EPA, Kevin Reilly/R1/USEPA/US@EPA, Karen Mcguire/R1/USEPA/US@EPA, Julie Bliss/R1/USEPA/US@EPA, Davidj Gray/R1/USEPA/US@EPA
Date: 06/16/2011 04:28 PM
Subject: Fw: PFCs on Cape Cod - more info from R5

FYI

----- Forwarded by Jane Downing/R1/USEPA/US on 06/16/2011 04:26 PM -----

From: Thomas Poy/R5/USEPA/US
To: Laurence Libelo/DC/USEPA/US@EPA, Jane Downing/R1/USEPA/US@EPA
Date: 06/16/2011 04:25 PM
Subject: Re: PFCs on Cape Cod

Laurence: Jane Downing, R1's Drinking Water Branch Chief, would have more details on the trace detects.

Tom

Tom Poy
Chief, Ground Water and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

Laurence Libelo Brad and Tom, Are these different them then the... 06/16/2011 03:09:42 PM

From: Laurence Libelo/DC/USEPA/US

To: Bradley Grams/R5/USEPA/US@EPA
Cc: Thomas Poy/R5/USEPA/US@EPA, Kimberly Harris/R5/USEPA/US@EPA
Date: 06/16/2011 03:09 PM
Subject: Re: PFCs on Cape Cod

Brad and Tom,

Are these different them then the Air Force Base related groundwater samples? Where are these from?

There are non-F AFFFs out there now. Until recently pretty much all AFFF was a mix of lots of different PFCs but the industry if shifting toward other stuff. Most of what is still in use is the 3M sulfonate mix. It has a self life of 30+ years and if fairly expensive so nobody replaces it until they use it. Pretty much every fire truck in the country has a bucket of concentrated PFCs on it and they are almost entirely PFOS stuff. Airports have more them most municipal fire depts so an airport is a reasonable place to look for the source.

Laurence

==========

E. Laurence Libelo, Ph.D.
Senior Environmental Engineer
Exposure Assessment Branch
Office of Pollution Prevention and Toxics
U.S. Environmental Protection Agency
OCSPP/OPPT/EETD/EAB
202-564-8553
FAX 202-546-8671

| | | |
|---|---|---|
| Bradley Grams | Hi Tom: I would check with Laurence Libelo of O... | 06/16/2011 03:49:38 PM |
| Thomas Poy | Kim/Brad: Region 1 mentioned that they've foun... | 06/16/2011 02:43:36 PM |

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Aqueous Film Forming Foams

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Bradley Grams  Hi Tom: I would check with Laurence Libelo of O...  06/16/2011 03:49:38 PM

From: Bradley Grams/R5/USEPA/US
To: Thomas Poy/R5/USEPA/US@EPA
Cc: Kimberly Harris/R5/USEPA/US@EPA, Laurence Libelo/DC/USEPA/US@EPA
Date: 06/16/2011 03:49 PM
Subject: Re: PFCs on Cape Cod

Hi Tom:

I would check with Laurence Libelo of OPPT (Exposure, Economics and Technology Division); he's looked into this before and may be interested in this R1 case for a variety of reasons. He may have some thoughts for R1. I'm cc'ing him on this e-mail.

In addition, Minnesota Pollution Control Agency has also evaluated this issue through a few divisions, and I'll check with my MPCA Chemical counterparts for more information.

Finally, R1 is re-investing in their Core TSCA program, so their FIFRA/TSCA program may have some resources as well.

Thanks!

Cheers,

Bradley Randall Grams, B.Sc., B.A.
Environmental Scientist
OCSPP Sublead Region Coordinator, Reviewing and Reducing TSCA Chemical Risk

EPA Region 5
Land and Chemicals Division
Chemicals Management Branch, Toxics Section

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E-MAIL: grams.bradley@epa.gov



Thomas Poy  Kim/Brad: Region 1 mentioned that they've foun...  06/16/2011 02:43:36 PM

From: Thomas Poy/R5/USEPA/US
To: Harris.Kimberly@epamail.epa.gov, Bradley Grams/R5/USEPA/US@EPA
Date: 06/16/2011 02:43 PM
Subject: PFCs on Cape Cod

Kim/Brad: Region 1 mentioned that they've found PFCs in a couple of public water supply wells on Cape

Cod at trace levels (nano-grams/L). No known sources though the wells are near an airport. Fire fighting practice comes to mind. Do you know if there's any work on alternatives to fire-fighting foam which contain PFCs?

Tom

---

Tom Poy
Chief, Ground Water and Drinking Water Branch
USEPA - Region 5
(312) 886-5991

**Re: PFOA & PFOS Sources**
**Doug Heath** to: Jane Downing
Cc: Davidj Gray, Julie Bliss, Karen Mcguire, Kevin Reilly
06/16/2011 03:59 PM

Hi Jane,
You ask such great questions.
As a matter of fact, yes. PFOA and PFOS are components of the synthetic foam called AFFF.

Here is what Wikipedia says about it:
**"Aqueous film forming foams (AFFF)** are water-based and frequently contain hydrocarbon-based surfactant such as sodium alkyl sulfate, and fluorosurfactant—such as fluorotelomers, perfluorooctanoic acid (PFOA), or perfluorooctanesulfonic acid (PFOS). They have the ability to spread over the surface of hydrocarbon-based liquids."

So if AFFF has been used at Barnstable Airport, either for emergencies or training, PFOA and PFOS could be released into the environment (stormwater and groundwater).
Doug

Jane Downing — Hi Doug anything on fire foam? — 06/16/2011 03:50:36 PM

| | |
|---|---|
| From: | Jane Downing/R1/USEPA/US |
| To: | Doug Heath/R1/USEPA/US@EPA |
| Cc: | Davidj Gray/R1/USEPA/US@EPA, Julie Bliss/R1/USEPA/US@EPA, Karen Mcguire/R1/USEPA/US@EPA, Kevin Reilly/R1/USEPA/US@EPA |
| Date: | 06/16/2011 03:50 PM |
| Subject: | Re: PFOA & PFOS Sources |

PFOA, PFOS AFFF

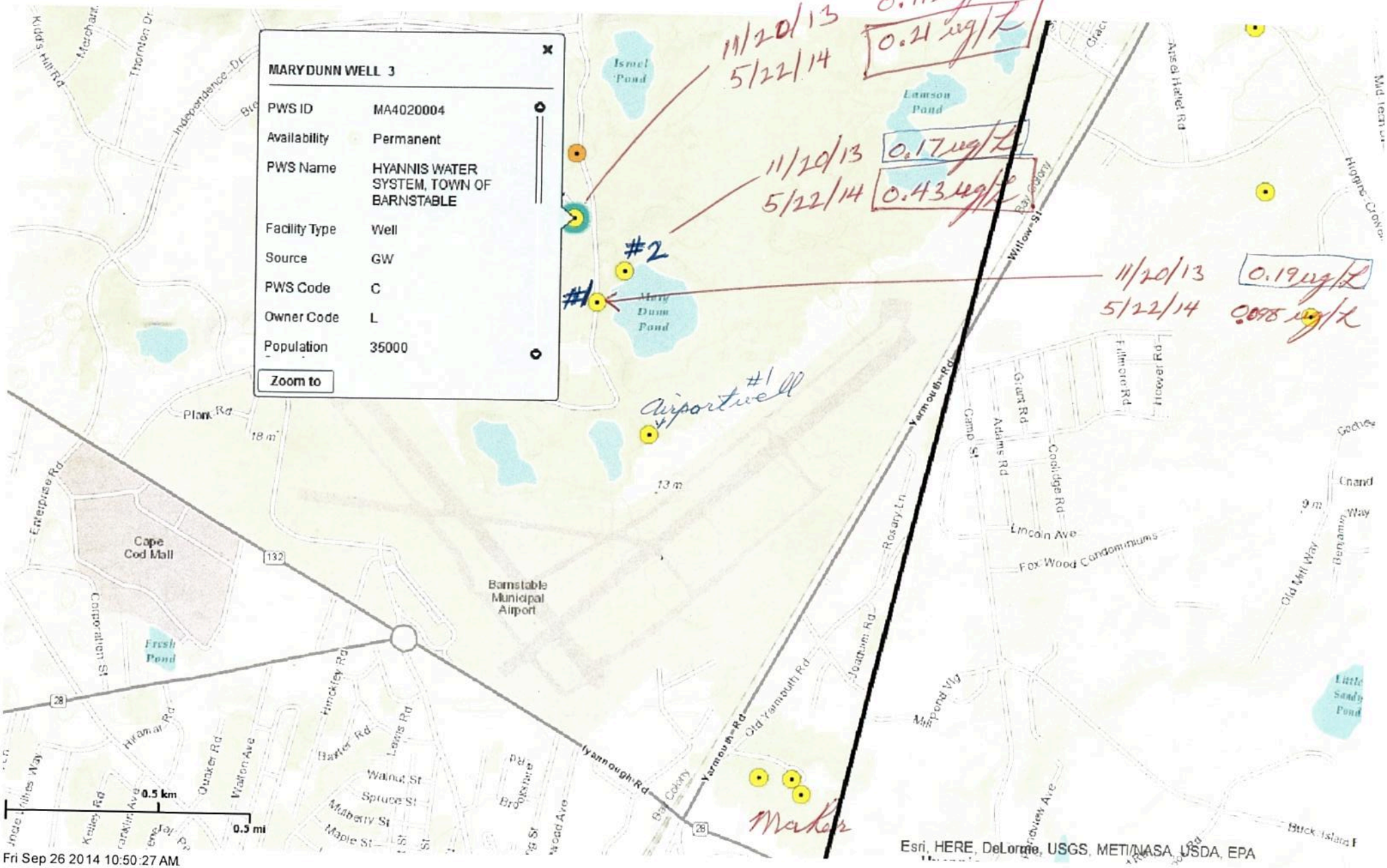
Hi Doug
anything on fire foam?

Thanks
Jane

Doug Heath — Hi All, PFOA and PFOS are prevalent and ubiqui... — 06/16/2011 12:37:03 PM

# Hyannis Airport

PFOS UCMR3



## Chemicals Tested for in Silent Spring Report

**Julie Bliss** to: Jane Downing

Cc: Karen Mcguire, Doug Heath, Kevin Reilly, Davidj Gray, Maureen McClelland

06/22/2011 03:11 PM

Hi Jane,

Below is what I found on the certain chemicals of concern that Silent Spring tested for:

Carbamazepine- drug commonly used for epilepsy and bipolar disorder (rapidly metablolizes with dilantin)

Dilantin (phenytion)- drug used to control, treat, and prevent seizures

Maprobamate- drug used to treat anxiety that was mostly replaced by Valium in the 70's due to overdose and addiction to the drug

Sulfamethoxazole- antibiotic commonly used to treat strep, e coli, UTI's and pheumonia

Triethylphosphate (TEP)- liquid flame retardant, pesticide, plasticizer, polymer modifier

Tris (chloropropyl) phosphate (TCPP)- liquid flame retardant, polyurethane

Tris (2-chloroethyl) phosphate (TCEP)- foam flame retardant, oil additive of polyurethane

As you can see, the top are all pharmaceuticals and the bottom are all flame retardants. It makes sense why they tested for the bottom chemicals (with PFOA and PFOS) but it would be interesting to find out why they tested for the top pharmaceuticals, mostly dealing with neurological disorders and where those chemicals could be coming from.

Let me know if you have any questions or would like me to find more information about anything.

Julie

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**Julie Bliss** to: Jane Downing

06/22/2011 03:11 PM

Cc: Karen Mcguire, Doug Heath, Kevin Reilly, Davidj Gray, Maureen McClelland

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Let me know if you have any questions or would like me to find more information about anything.

Julie

6/16/2011 10 AM Jane D, Karen McT,
Doug H, Julie Bl, David T + me

12:25 Jonathan H, said "okay → go to it
Said we'd keep informed
He suggested to not only let Cape Cod
Com informed but Horsley + Witten too
↑ Tom Tambareri
Jonathan talked to Dave Terry about
our (EPA) sampling for PFOAs +
PFOS and Dave T did not object.